Amendments to the Claims:

The following listing of claims replaces all previous listings or versions thereof:

1-13. (Canceled).

14. (Currently amended) A purified human alpha subunit of an SCN1A sodium channel nucleic acid ~~sequence~~ comprising a nucleic acid sequence selected from the group consisting of:

~~(a) the nucleic acid sequence of SEQ ID NO:1;~~

~~(b) a full complement of (a);~~

[[(c)]](a) a nucleic acid sequence encoding an alpha subunit of SCN1A selected from the group consisting of:

(i) ~~the alpha subunit of SCN1A set forth in SEQ ID NO:3;~~

~~(ii)~~ an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 188 which replaces an aspartic acid residue by a valine residue;

[[(iii)]](ii) an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 1238 which replaces a glutamic acid residue by an aspartic acid residue;

[[(iv)]](iii) an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 1773 which replaces a serine residue residue by a tyrosine residue; and

[[v]](iv) an alpha subunit of SCN1A being at least 95% identical to the SCN1A alpha subunits in **[[(ii)-(iv)]]**(i)-(iii) and comprising one of the mutations at amino acid position 188, 1238 or 1773; **[[and]]**

[[(d)]](b) an SCN1A nucleic acid fragment selected from the group consisting of:

[[(vi)]](v) an amplified segment ~~comprising~~consisting of the nucleic acid sequence from nucleotide 739 to 867 of SEQ ID NO:1,

[[(vii)]](vi) an amplified segment comprising the nucleic acid sequence from nucleotide 739 to 867 of SEQ ID NO:1 having a mutation at nucleotide 828,

[[(viii)]](vii) an amplified segment ~~comprising~~consisting of the nucleic acid sequence from nucleotide 3970 to 4143 of SEQ ID NO:1,

[[(ix)]](viii) an amplified segment comprising the nucleic acid sequence from nucleotide 3970 to 4143 of SEQ ID NO:1 having a mutation at position 3978,

[[(x)]](ix) an amplified segment ~~comprising~~consisting of the nucleic acid sequence from nucleotide 5521 to 5747 of SEQ ID NO:1, and

[[(xi)]](x) an amplified segment comprising the nucleic acid sequence from nucleotide 5521 to 5747 of SEQ ID NO:1 having a mutation at position 5582; and

(c) a full-length complement of (a) or (b).

15.-16. (Canceled)

17. (Currently amended) A vector comprising any one of the ~~sequences~~ nucleic acids of claim 14.

18.-19. (Canceled)

20. (Previously presented) An isolated cell harboring a vector of claim 17.

21.-24. (Canceled)

25. (Currently amended) The purified nucleic acid of claim 14, wherein said alpha subunit SCN1A nucleic acid encodes:

(a) an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 188 which replaces an aspartic acid residue by a valine residue; or

(b) an alpha subunit of SCN1A at least 95% identical to the alpha subunit of SCN1A ~~alpha subunits in (a)~~ as set forth in SEQ ID NO:3 and comprising **[[said]]**a

mutation corresponding to **[[at]]** amino acid position 188 which replaces an aspartic acid residue by a valine residue.

26.-29. (Canceled)

30. (Currently amended) The purified nucleic acid of claim 14, wherein said SCN1A nucleic acid fragment **[[in (d)]]** comprises a ~~GCATTTGACGATATA~~nucleotide sequence as set forth in SEQ ID NO:190 or ~~an ATCATATACTTCCTG nucleotide sequence~~ SEQ ID NO:192.

31. (Canceled)

32. (Previously presented) The purified nucleic acid of claim 14, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3, wherein aspartic acid residue at position 188 is replaced by a valine residue.

33. (Previously presented) The purified nucleic acid of claim 14, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3, wherein glutamic acid residue at position 1238 is replaced by an aspartic acid residue.

34. (Previously presented) The purified nucleic acid of claim 14, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3, wherein serine residue at position 1773 is replaced by a tyrosine residue.

35.-38. (Canceled)

39. (Currently amended) A vector comprising ~~the sequences~~ any one of the nucleic acids of claim 25.

40. (Previously presented) An isolated cell harboring the vector of claim 39.

41. (New) A vector comprising any one of the nucleic acids of claim 30.

42. (New) An isolated cell harboring the vector of claim 41.

43. (New) A vector comprising the nucleic acid of claim 32.

44. (New) An isolated cell harboring the vector of claim 43.

45. (New) A vector comprising the nucleic acid of claim 33.

46. (New) An isolated cell harboring the vector of claim 45.

47. (New) A vector comprising the nucleic acid of claim 34.

48. (New) An isolated cell harboring the vector of claim 47.

49. (New) A purified human alpha subunit of an SCN1A sodium channel nucleic acid comprising a nucleic acid sequence selected from the group consisting of:

(a) a nucleic acid sequence encoding an alpha subunit of SCN1A selected from the group consisting of:

(i) an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 188 which replaces an aspartic acid residue by a valine residue;

(ii) an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 1238 which replaces a glutamic acid residue by an aspartic acid residue;

(iii) an alpha subunit of SCN1A as set forth in SEQ ID NO:3, comprising a mutation corresponding to amino acid position 1773 which replaces a serine residue residue by a tyrosine residue; and

(iv) an alpha subunit of SCN1A being at least 95% identical to the SCN1A alpha subunits in (i)-(iii) and comprising one of the mutations at amino acid position 188, 1238 or 1773;

(b) an SCN1A nucleic acid fragment selected from the group consisting of:

(v) an amplified segment comprising the nucleic acid sequence from nucleotide 739 to 867 of SEQ ID NO:1 having a mutation at nucleotide 828,

(vi) an amplified segment comprising the nucleic acid sequence from nucleotide 3970 to 4143 of SEQ ID NO:1 having a mutation at position 3978,

(vii) an amplified segment comprising the nucleic acid sequence from nucleotide 5521 to 5747 of SEQ ID NO:1 having a mutation at position 5582; and

(c) a full-length complement of (a) or (b).

50. (New) The nucleic acid of claim 49, wherein said nucleic acid sequence is selected from the group consisting of:

(viii) an amplified segment consisting of the nucleic acid sequence from nucleotide 739 to 867 of SEQ ID NO:1 having a mutation at nucleotide 828,

(ix) an amplified segment consisting of the nucleic acid sequence from nucleotide 3970 to 4143 of SEQ ID NO:1 having a mutation at position 3978;

(x) an amplified segment consisting of the nucleic acid sequence from nucleotide 5521 to 5747 of SEQ ID NO:1 having a mutation at position 5582; and

(xi) a full-length complement of (viii)-(x).

51. (New) A vector comprising any one of the nucleic acids of claim 49.

52. (New) An isolated cell harboring the vector of claim 51.

53. (New) A purified human alpha subunit of an SCN1A sodium channel nucleic acid comprising a nucleic acid sequence selected from the group consisting of:

(a) a nucleic acid sequence encoding an alpha subunit of SCN1A selected from the group consisting of:

(i) an alpha subunit of SCN1A as set forth in SEQ ID NO:409, comprising a mutation corresponding to amino acid position 188 which replaces an aspartic acid residue by a valine residue;

(ii) an alpha subunit of SCN1A as set forth in SEQ ID NO:410, comprising a mutation corresponding to amino acid position 1238 which replaces a glutamic acid residue by an aspartic acid residue;

(iii) an alpha subunit of SCN1A as set forth in SEQ ID NO:411, comprising a mutation corresponding to amino acid position 1773 which replaces a serine residue residue by a tyrosine residue; and

(iv) an alpha subunit of SCN1A being at least 95% identical to the SCN1A alpha subunits in (ii)-(iii) and comprising one of the mutations at amino acid position 188, 1238 or 1773; and

(b) a full-length complement of a).